

IN THE CLAIMS

Each claim of the application is set forth below with a parenthetical notation immediately following the claim number indicating the claim status. The Examiner's entry of the claim amendments under Section 1.121 is respectfully requested.

1. (CURRENTLY AMENDED) An integrated circuit structure for controlling data processing by a shared network resource according to a scheduling scheme, wherein the data is supplied from a plurality of network users, each network user assigned having a data processing priority, said integrated circuit structure comprising:

a first circuit module capable of commanding one of implementing a plurality of scheduling schemes responsive to control signals input thereto; including a first scheme and a second scheme; and

a plurality of processing blocks each responsive to data supplied from a different priority user, each one of the plurality of processing blocks indicating whether data from an associated user is waiting to be processed;

a second circuit module responsive to the first circuit module and the plurality of processing blocks, wherein the second circuit module commands a first, second or third scheduling scheme, wherein the first scheduling scheme processes user data according to a user's priority when user data is waiting to be processed, and wherein the second scheduling scheme processes all data of a highest priority user whenever highest priority user data is waiting to be processed followed by data of all users having data waiting to be processed according to the user's priority, and wherein the third scheduling scheme processes data from all users during a time interval. for selecting an enabled scheduling scheme from among the plurality of scheduling schemes, wherein the network resource processes data according to the enabled scheduling scheme, wherein responsive to the first scheme enabled the shared network resource services all network users by successively processing a limited amount of data from each network user, wherein the data processing priority determines the order in which the shared network resource processes data, and wherein responsive to the second scheme enabled all data from a higher priority network user is processed before processing data from lower priority network users.

2. (CURRENTLY AMENDED) The integrated circuit structure of claim 1 wherein the first scheduling scheme comprises a strict priority scheduling scheme for processing data

according to the user's priority, the second scheduling scheme comprises a strict priority scheduling scheme for the highest priority user and a round robin scheduling scheme for all other users, and the third scheduling scheme comprises a round robin scheduling scheme for all users.
~~each one of the plurality of network users is assigned to a service class, and wherein the second circuit module controls the network resource to service data from each service class in accordance with the enabled scheduling scheme.~~

3. (CURRENTLY AMENDED) The integrated circuit structure of claim 1 ~~2~~ ~~wherein each user within a service class is assigned a priority within the service class, and wherein the second circuit module controls the network resource to service data from each user in accordance with a commanded scheduling scheme. the priority of the user within the service class.~~

4. (CURRENTLY AMENDED) The integrated circuit structure of claim 1 wherein each one of the plurality of processing blocks ~~network resource~~ further comprises ~~at least one a~~ a data queue ~~for each one of the plurality of network users~~ for storing data received from the associated user, and wherein the network resource services data from each user by reading data from the ~~at least one~~ data queue of the user in accordance with the a commanded enabled scheduling scheme.

5. (CURRENTLY AMENDED) The integrated circuit structure of claim 1 ~~claim 4~~ ~~wherein each one of the plurality of processing blocks further comprises~~ two data queues for each user, wherein a first data queue is a pending queue for storing where incoming data packets are stored; and wherein a second data queue is an active queue from which data is serviced by the network resource.

6. (ORIGINAL) The integrated circuit structure of claim 1 wherein the data is in the form of data packets.

7. (CURRENTLY AMENDED) The integrated circuit structure of claim 1 wherein a network operator supplies the control signals to the first ~~second~~ circuit module according to a desired ~~is manually operable for selecting the enabled~~ scheduling scheme.

8. (CANCEL)

9. (CURRENTLY AMENDED) An apparatus for selecting data from a plurality of network users for service by a shared network resource, wherein the data from each one of the plurality of network users is assigned to a priority class, and wherein a scheduling scheme for

selecting the data for servicing by the network resource is selectable from among a plurality of scheduling schemes, said apparatus comprising:

a controller for supplying a signal indicating ~~an first or a second~~ enabled scheduling scheme from among the plurality of scheduling schemes;

a plurality of ~~processing scheduling~~ blocks each comprising a queue responsive to processing user data from an assigned respective priority class user and each providing an eligible queue output signal in response to data from the respective priority class user awaiting service; and

a class selector for ~~indicating the queue to be serviced determining the data to be serviced~~ in response to the eligible queue output signal from each one of said plurality of ~~processing scheduling~~ blocks and further in response to the ~~first or the second~~ signal indicating the enabled scheduling scheme, wherein according to a first scheduling scheme queued user data is processed according to a user's priority, and wherein according to a second scheduling scheme all queued user data of a highest priority user is processed whenever highest priority user data is queued followed by data of all users having queued user data according to the user's priority, and wherein according to a third scheduling scheme all queued user data is processed during a time interval. ~~wherein responsive to the first scheme enabled the shared network resource services all network users by successively processing a limited amount of data from each network user, wherein the data processing priority determines the order in which the shared network resource processes data, and wherein responsive to the second scheme enabled all data from a higher priority network user is processed before processing data from lower priority network users.~~

10. (ORIGINAL) The apparatus of claim 9 wherein the apparatus is incorporated in an integrated circuit.

11. (CURRENTLY AMENDED) The apparatus of claim 9 wherein the queue comprises a first queue and a second queue, the user data from the plurality of network users of each class is provided on one of said a first and said a second queue of the assigned one of the plurality of processing blocks, and wherein the ~~enabled~~ scheduling scheme indicates determines whether said first queue or both said first and said second queues are serviced. ~~processed by each one of the plurality of scheduling blocks.~~

12. (ORIGINAL) The apparatus of claim 11 wherein the first queue is an active queue and wherein the second queue is a pending queue, and wherein data is stored in the pending queue while the network resource services the data in the active queue.

13. (CANCEL)

14. (CURRENTLY AMENDED) The apparatus of claim 9 wherein the ~~plurality of first scheduling schemes comprise a strict priority scheduling scheme for processing user data according to the user's priority, the second scheduling scheme comprises a strict priority scheduling scheme for the highest priority user and a round robin scheduling scheme for all other users, and the third scheduling scheme comprises a round robin scheduling scheme for all users. bandwidth limited strict priority and strict priority plus smooth deficit weighted round robin.~~

15. (CURRENTLY AMENDED) For a shared network resource receiving data from a plurality of subscriber classes each class comprising a plurality of subscribers and each subscriber storing data to an active data queue or a pending data queue, a method for implementing a ~~user-selectable~~ scheduling scheme, from among a plurality of available scheduling schemes, for ~~controlling~~ processing of data received from the plurality of subscribers by the network resource, the method comprising:

determining the ~~user-selected~~ scheduling scheme;

responsive to if a first selected scheduling scheme is selected, processing data stored to the active and the pending data queues received from subscribers of the plurality of subscriber classes according to a predetermined priority order for each subscriber class, wherein all data from the plurality of subscribers of a higher priority subscriber class is processed before processing data from subscribers of a lower priority subscriber class; and

responsive to if a second selected scheduling scheme is selected, first processing data stored to the active and the pending queues received from subscribers of the plurality of subscriber classes within at least of the highest priority subscriber class, then processing data stored to the active and the pending queues of received from subscribers within the remaining subscriber classes according to a round robin scheduling scheme.

16. (CANCEL)